REMARKS

By the above actions, claims 1, 6 and 15 have been amended, new claims 23-26 have been added and claims 2, 16 and 17 have been cancelled. The new language of claims 1 and 15 as well as new claims 23 and 24 are supported, e.g., by paragraphs [0007], [0024], [0043] and [0044] of the substitute specification. In view of these actions and the following remarks, further consideration of this application is requested.

With regard to the unity of invention requirement made by the Examiner, that was indicated in the Office Action to be without traverse, it is noted the requirement was traversed in applicant's preceding response on the basis that the requirement made by the Examiner is inconsistent with the rules governing unity of invention as set forth in 37 CFR 1.475(b)(4) for the reasons indicated. However, the Examiner's indication that rejoinder will be considered should the elected claims be allowed has been noted and for this reason the withdrawn claims have been further amended to remain parallel to the further amended elected claims.

Claims 1, 2 and 4 have now been rejected based upon the combination of the Rock and Cisar et al. references when viewed in further combination with the Bailey et al. reference. This rejection is inappropriate as it relates to the claims as now presented for the following reasons.

The differences between the present invention and the Rock and Cisar et al. references have been fully commented upon in applicant's preceding response, and for the sake of brevity, the Examiner's attention is attention is directed back to those comments which are hereby incorporated by reference.

With regard to the Bailey et al. reference, it describes a method of checking the assembly of fuel cell stacks, in which – during the assembly – information about stack compression and change of dimensions are provided for test purposes (see page 4, lines 20 to 24). The object is to provide tightness (i.e., sealing) and a sufficient electrical contact between the plates and the membrane electrode components (MEA) (see page 3, lines 24 to 33). Bailey et al. suggests a method of testing, wherein a displacement measured at a given force is compared relative to a reference displacement for that force (see, page 5, lines 15 to 17). Further, Bailey et al. suggests interrupting compression of the stack when the measured displacement varies from a reference displacement by more than a predetermined threshold

amount (see, page 5, lines 18 to 21). Moreover, the Bailey et al. reference mentions the possibility of interrupting the application of the force in response to an output signal from a controller (see, page 5, lines 21 to 23). Therefore, as noted in the Background portion of the present application "one problem in the known processes and devices for producing fuel cell stacks [such as that of the Bailey et al. reference] is that the joining of the fuel cell stack takes placed uncontrolled and without the possibility of being able to intervene in the process, for which reason scrap rates are high" (see paragraphs [0004] and [0005], page 2).

In contrast, according to the present invention, "the tension means 8.1 is supplied with a manipulated variable for the tensile force to be produced by a control means 8.6. The control means 8.6 produces the manipulated variable...depending on one or more forces detected by way of...a change of the dimensions of the fuel cell stack 1 which has been detected by way of at least one path sensor 8.5" (see paragraph [0039] of the Substitute Specification). "By way of...the path sensor 8.5, the force-path curve of the bracing of the fuel cell stack 1 is detected...The force-path curve is compared to one or more predefined theoretical curves. If deviations should arise, this indicates non-uniform bracing of the fuel cell stack 1. In this case, suitable countermeasures can be initiated. For example, the force component produced by at least one tension means can be increased or decreased... Non-uniform bracing of the fuel cell stack 1 can be especially effectively counteracted (see, paragraph [0043] of the Substitute Specification).

Thus, according to the method of the present invention, the manipulated force component F is applied at a certain moment (when the glass solder is malleable) and at a certain temperature in dependence on a joining way (joining length). Thus, a control-loop-manipulated force facilitates or results in a monitored (supervised) malleable flowing of the glass solder, taking into account individual deformability (deviation in force-path curve) of the individual fuel cell stacks to be processed. Such a feature is of no interest for PEM stacks of the Bailey et al. reference, because PEM stacks are resilient deformable.

The threshold amount mentioned in reference the Bailey et al. reference is predetermined. Also the reference displacement is obviously a predetermined thus constant value. As such, the Bailey et al. reference does not contain any hint to a dynamic variability in dependence on the detected value of change of dimensions being typical for a control loop.

Further, the Bailey et al. reference does not contain any hint to the core idea of the present invention to apply a control-loop-manipulated force component (see, paragraph [0039] of the Substitute Specification) to the stacked fuel cell stack, wherein the input value to the controller of the control loop (here the joining way) is of a different type of physical value (here a length) than the output value (here the manipulated force component) of the controller (here a force), (see, paragraph [0043] of the Substitute Specification). Put another way, the monitoring and comparing performed in accordance with the Bailey et al. reference is designed to enable, determination of whether or not the cell stack being produced is defective, and thus, stop the process, or to "detect several types of defects in stack assembly or in the fuel cell components thereof:, see, page 17, lines 16 et seq.; however, the monitored/compared conditions are not used to modify the production of the cell stack, only to evaluate the condition of the finished fuel stack.

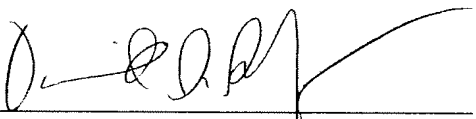
This is in direct contrast to the present invention which, as noted above, is designed "to develop the generic processes and devices such that the high scrap rates which had to be tolerated in the past in the production of fuel cell stacks are reduced, and thus, costs are cut" and does so by at least one controlled force component (F) being controlled **during** the process as a function of sensed dimensional changes with increasing of the compression of the fuel cell stack being stopped as soon as the change of dimensions of the fuel cell stack detected by the at least one distance sensor has assumed a value which indicates that the fuel cell stack has attained predetermined properties (claim 1) such as the tightness of the stack (claims 23 and 25). Moreover, because of the dynamic nature of applicant's process, conditions that could produce a defective fuel cell stack, such as the occurrence of nonuniform bracing of the fuel cell stack, can be corrected before the stack is uncorrectably damaged by countermeasures being initiated to make the bracing of the fuel cell stack uniform (claims 24 and 26; portion of paragraph [0043] beginning at line 5 of page 10).

Thus, even if the control of the Bailey et al. reference were to be applied to the Rock method as modified on the basis of the Cisar et al. reference, the present invention would not result and the benefits thereof would not be obtained, nor would the invention and its benefits become obvious, and the same is true even if tensioning technique of Barton and/or the leak

testing of Hermann are also incorporated. Accordingly, reconsideration and withdrawal of the outstanding rejections are in order and are now requested.

Therefore, in the absence of new and more relevant prior art being discovered, this application should now be in condition for allowance and action to that effect is requested. However, while it is believed that this application should now be in condition for allowance, in the event that any issues should remain, or any new issues arise, after consideration of this response which could be addressed through discussions with the undersigned, then the Examiner is requested to contact the undersigned by telephone for the purpose of resolving any such issue and thereby facilitating prompt approval of this application.

Respectfully submitted,

By: 

David S. Safran
Registration No. 27,997

Customer No. 25570

Roberts Mlotkowski Safran & Cole, P.C.
P.O. Box 10064
McLean, VA 22102

Direct Telephone: (703) 584-3273

DSS:kmm